IN THE CLAIMS:

Please amend the claims as follows:

Claims 1-38 (Cancelled)

39. (Previously Presented) A fiber amplifier comprising

a gain optical fiber having only one single-mode core, said core containing dopant ions capable of producing stimulated emission of light within a predetermined band of wavelengths including a wavelength λ_s when pumped with light of wavelength λ_p, said gain fiber having input and output ends, said dopant ions being selected from the group consisting of erbium, neodymium and praseodymium,

filtering means for attenuating light at at least some of the wavelengths within said predetermined band of wavelengths, said filtering means containing a dopant selected from the group consisting of erbium, dysprosium, neodymium, ytterbium, samarium, praseodymium, thulium, vanadium and cadmium selenide,

means for introducing a signal of wavelength λ_s into said gain fiber input end,

means for introducing pump light of wavelength λ_p into said gain fiber, and

means for preventing the excitation of said filtering means by light of wavelength λ_p, wherein means for preventing the excitation is disposed between the gain optical fiber and the filtering means, wherein the means for preventing the excitation includes an optical fiber having a dopant that substantially attenuates light at wavelength λ_p.

40. (Previously Presented) A gain amplifier in accordance with claim 39 wherein said filtering means comprises an optical fiber containing said dopant ions.

41. (Previously Presented) A fiber amplifier having a flattened gain spectrum comprising

a gain optical fiber having only one single-mode core, said core containing dopant ions capable of producing a gain spectrum due to stimulated emission of light within a predetermined band of wavelengths including a wavelength λ_s when pumped with light of wavelength λ_p, said

gain fiber having input and output ends, and wherein the gain spectrum of said gain optical fiber over said band of wavelengths has a first portion having a relatively small gain variation over a region of said band wavelengths and a second portion having a relatively large gain variation over a different region of said band wavelengths, wherein said first portion of the gain spectrum is relatively flat and wherein said second portion is not flat and exhibits a greater gain than the gain exhibited over said relatively flat portion;

ion filtering means for absorbing light within said predetermined band of wavelengths, said ion filtering means having an absorption spectrum having a first portion exhibiting relatively small absorption over said region of said band of wavelengths and a second portion having a relatively large absorption of said different region of said band of wavelengths where the gain spectrum is not flat, said ion filtering means comprising a concentration and distribution of unpumped gain ions within said ion filtering means wherein amplified light having wavelengths within said predetermined band of wavelengths where the gain spectrum is not flat is attenuated to an extent such that the gain spectrum over the entire predetermined band of wavelengths is flattened and exhibits relatively small gain variation over said entire band of wavelengths;

means for introducing a signal of wavelength λ_s into said gain fiber input end,

means introducing pump of wavelength λ_p into said gain fiber, and

means for preventing the excitation of said pumped gain ions by light of wavelength λ_p wherein means for preventing the excitation is disposed between the gain optical fiber and the ion filtering means, wherein the means for preventing the excitation includes an optical fiber having a dopant that substantially attenuates light at wavelength λ_p.

42. (Cancelled)

43. (Previously Presented) A fiber amplifier comprising

a gain optical fiber having only one single-mode core, said core containing dopant ions capable of producing stimulated emission of light within a predetermined band of wavelengths including a wavelength λ_s when pumped with light of wavelength λ_p, said gain fiber having input and output ends, said dopant ions being selected from the group consisting of erbium, neodymium and praseodymium, and wherein the gain spectrum of said gain optical fiber, over said band of wavelengths and when pumped with light from wavelength λ_p has a first portion

which is relatively flat and a second portion which is not flat and exhibits gain greater than the gain exhibited over said relatively flat portion;

filtering means for attenuating light at at least some of the wavelengths within said predetermined band of wavelengths, said filtering means containing a dopant selected from the group consisting of erbium, dysprosium, neodymium, ytterbium, samarium, praseodymium, thulium, vanadium and cadmium selenide, said filtering means having a transmission curve over said predetermined band of wavelengths and in the absence of excitation by said gain fiber over said predetermined band of wavelengths when said gain fiber is excited by light at wavelength λ_p so that when light in the range of said predetermined range of wavelengths is amplified and filtered by said filtering means, the resulting gain spectrum for said amplifier over said predetermined range of wavelengths is substantially flat;

means for introducing a signal of wavelength λ_s into said gain fiber input end;

means introducing pump light of wavelength λ_p into said gain fiber, and

means for preventing the excitation of said pumped gain ions by light of wavelength λ_p wherein means for preventing the excitation is disposed between the gain optical fiber and the filtering means, wherein the means for preventing the excitation includes an optical fiber having a dopant that substantially attenuates light at wavelength λ_p.

44-50 (Cancelled).

Please add the following new claims:

51. (New) The fiber amplifier in accordance with claim 39, wherein the means for introducing pump light of wavelength λ_p is a laser dioide.

52. (New) The fiber amplifier in accordance with claim 39, wherein the means for introducing a signal of wavelength λ_s is a telecommunication fiber.

53. (New) The fiber amplifier in accordance with claim 39, further comprising a coupler member configured to connect the means for introducing the signal of wavelength λ_s and said gain fiber.

54. (New) The fiber amplifier in accordance with claim 53, wherein the coupler member further connects the means introducing pump light of wavelength λ_p and said gain fiber.

55. (New) The fiber amplifier in accordance with claim 39, wherein said gain fiber is in series with an optical fiber containing signal light absorbing ions that are different from said ions in said gain optical fiber.